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New species of *Latreillopsis* Henderson, 1888 (Brachyura: Homolidae) and *Neopalicus* Moosa & Serène, 1981 (Brachyura: Palicidae) from the Hawaiian Islands

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Abstract

Two new species of brachyuran crabs belonging to *Latreillopsis* Henderson, 1888 (Homolidae) and *Neopalicus* Moosa & Serène, 1981 (Palicidae) respectively are described from Maui, Hawai'i. The new species of *Latreillopsis* is distinguished from its nine congeners by a granular carapace and pereopods, a triangular G1, and by the distinctive ornamentation of its carapace and third maxillipeds; the new species of *Neopalicus* from its three congeners by the presence of three triangular anterolateral teeth, absence of extensions on the outer margins of the P3 and P4 propodi, dentate inner margins of the P3, P4 dactyli, and absence of ridges on the female abdomen. Also listed is *Latreillia metanesa* Williams, 1982 (Latreilliidae), recorded for the first time from the archipelago since its description from *Albatross* material collected in 1902.

Key words: Brachyura, Homolidae, Latreilliidae, Palicidae, new species, Hawaiian Islands

Introduction

A collection of brachyuran crabs dredged from 91 m off the southwestern coast of Maui, Hawai'i included specimens belonging to species of *Latreillopsis* Henderson, 1888 (Homolidae) and *Neopalicus* Moosa & Serène, 1981 (Palicidae) that proved to be new. Both species, which are described herein, are so far only known from the Hawaiian Islands, bringing to 42 (15% of a total of 285 reliably known species; see Castro 2011: table 2) the number of brachyuran species known to be endemic to the archipelago.

The terminology used follows the revisions of Homolidae (Guinot & Richer de Forges 1995) and Palicidae (Castro 2000). Paired structures are referred to in the singular in the descriptions of the new species. Carapace measurements, in millimeters, are given as carapace length × width. Carapace length measurements for homolids include the rostrum unless otherwise specified. The following abbreviations are used: cl, carapace length; cw, carapace width; G1, G2, male first and second gonopods. The material is deposited in the United States Natural History Museum (Smithsonian Institution) (USNM) and Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC).

Taxonomy

Section Podotremata Guinot, 1977

Superfamily Homoloidea H. Milne Edwards, 1837

Family Homolidae H. Milne Edwards, 1837

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Genus *Latreillopsis* Henderson, 1888

Type species: *Latreillopsis bispinosa* Henderson, 1888, by monotypy; gender feminine.

***Latreillopsis okala* n. sp.**
(Figs. 1–3)

"*Homola* (*Parhomola*) *majora* ?" — Edmondson 1951: 202, fig. 10.
"? Latreillopsis aff. cornuta" — Guinot & Richer de Forges 1995: 414.
" (?) *Latreillopsis cornuta*" — Castro 2011: 35 [in list].

Material examined. Holotype male 6.0 mm [5.4 mm not including rostrum] × 4.0 mm, off southwestern Maui, dredged, 91 m (300 ft), Mike Severns & Shirley Speer coll., 26.10.2112 (USNM 1220315).
Description of male holotype. Carapace (Fig. 1, 3a) longitudinally rectangular, longer than wide (cl/cw = 1.5, cl [not including rostrum]/cw = 1.3); small size; dorsal regions strongly defined, granular. Mesogastric region elevated, surmounted by large median boss, 2 protogastric bosses. Cardiac region with high, wide boss. Anterior branchial region slightly inflated, with blunt tubercle. Subhepatic region (Fig. 3b) slightly inflated, with 3 teeth, anterior tooth strongest, anteriorly directed; second, third teeth small, laterally directed. Rostrum proportionally short, straight. Pseudorostral spines long, curved, slightly longer than rostrum, outer margins with several rounded tubercles plus short, tooth-like tubercle near base of spine. Posterolateral border with 2 small, truncate teeth, better developed on left side.

Antennular, antennal articles bordered by short, rounded granules. Ocular peduncles (basophthalmite) long, thin, bordered by short, rounded granules; podophthalmite broad, bordered by few rounded granules. Cornea of eyes proportionally large, well developed.

Third maxilliped (Fig. 3b) merus with large, rounded anterior tubercle, sharp but not pointed anteroexternal angle; ischium narrow, about as long as merus, smooth except few short granules.

Chelipeds (P1) (Fig. 2) long, slender, conspicuous rounded granules, spatulate setae along margins of all articles; large triangular tooth on proximal margin of left dactylus; large dark spot proximal to pollex; propodus enlarged distally; merus slightly larger than other articles, spines absent.

Ambulatory legs (P2, P3 missing in holotype) (Fig. 1) P4 merus longer, wider than other articles, conspicuous rounded granules along margins of all articles; dorsally-oriented distal tooth on merus; dactyli with row of sharp spines on ventral margins. P5 reaching base of pseudorostral spine when folded; with conspicuous rounded granules along margins of merus, carpus; propodus slightly curved, with short granules only on dorsal margin; 2 long, acute, at tandem, proximal teeth; 2 small, parallel, acute teeth distal to large teeth; dactylus smooth.

Male abdomen (Fig. 2a) wide, all 6 somites freely articulating plus telson; homoloid press-button system, with prominence on abdominal sternite 4 locking with socket on abdominal somite 6. G1 (Fig. 3c) triangular, with short basal part, tapering distally; lateral margin slightly rimmed in ventral view, mesial part folded onto ventral surface over proximal three-fourths of triangular part. G2 (Fig. 3d) with truncated distal part, U-shaped in cross-section.

Complete abdomen (somite 6, telson in Edmondson 1951: fig. 10).

Female unknown.

Color. A photograph of the live holotype (Fig. 1b) shows bright orange carapace and eyes, orange-brown pereopods.

Etymology. From *ʻōkala*, Hawaiian for "rough" or "coarse," in reference to the granular carapace and pereopods diagnostic for the new species. The name is treated as a Latin noun in apposition.

Remarks. Edmondson (1951: 203) examined two small specimens (female cl 8 mm, second female specimen "of about the same size") dredged from 120 ft (36.6 m) off Oʻahu, Hawaiʻi, and identified them as "probable juveniles of *Homola* (*Parhomola*) *majora* Kubo, 1936" (type locality: Japan). Serène & Lohavanijaya (1973: 31) believed that Edmondson's specimens, which they did not examine, were not juveniles and that they "belonged probably to *Latreillopsis* but to *laciniata* more than to *bispinosa*." Guinot & Richer de Forges (1995: 414) did not examine Edmondson's specimens either and questionably identified them as "? *Latreillopsis* aff. *cornuta.*" *Latreillopsis cornuta* Guinot & Richer de Forges, 1995, was described from an ovigerous female (13 × 9.2 mm) from the Macclesfield Bank, South China Sea. Gordon (1950) also examined this specimen (as *L. laciniata*) and

figured the posterior half of the thoracic sternum (Gordon 1950: fig. 26A). Castro (2011: 35) could not locate Edmondson's specimens originally deposited in the Bishop Museum, Honolulu, Hawai'i (catalog number 5530; Edmondson 1951: 202) and followed Guinot & Richer de Forges' (1995) revision by listing Edmondson's record as "(?) *Latreillopsis cornuta.*"

The similarities between Edmondson's specimens, based on his description and rather stylized drawings (Edmondson 1951: 202, fig. 10), and *L. okala* **n. sp.** are evident from the general morphology of the dorsal surface of the carapace, posterior portion of the abdomen, and P1, P2, and P5, all of which were illustrated by Edmondson. The surface of the carapace and appendages were furthermore described as "densely covered with flat, wartlike granules" (Edmondson 1951: 202), which is diagnostic of the new species. There are some differences, however. The slender teeth on the dorsal regions and outer margins of the carapace and on the pseudorostral spines (Edmondson 1951: fig. 10a, b) are more blunt and thick in the holotype of the new species (Fig. 1, 3a). The two small teeth just anterior to the posterior margin shown in Edmondson's figure (Edmondson 1951: fig. 10a) are absent in the holotype. The rostrum is slightly shorter than the pseudorostral spines in Edmondson's figure but much shorter than the pseudorostral spines in the holotype of the new species. The rostrum and pseudorstral spines are cut off in the holotype, however, so the actual size relation cannot be ascertained. The pseudorostral spines, also incomplete, are slightly less curved in the holotype. These differences can perhaps be explained by differences in size, Edmondson's specimens (cl 8 mm, not including the rostrum) being larger than the holotype (cl 5.4 mm, not including the rostrum). The right cheliped of the female illustrated by Edmondson (1951: fig. 10c), is more slender than in the male holotype (Figs. 1, 2), but the discrepancy is most probably the result of a sex difference. We are therefore confident that the holotype of the new species and Edmondson's two specimens are conspecific.

There are superficial similarities between *L. okala* **n. sp.** and the description and photographs of *L. cornuta* given by Guinot & Richer de Forges (1995). As noted by Guinot & Richer de Forges (1995: 415), however, there are differences between *L. cornuta* and Edmondson's (1951) specimens, which are now identified as belonging to the new species. The rostrum is shorter in *L. cornuta* (Guinot & Richer de Forges 1995: fig. 37e) than in Edmondson's specimens, there are four equidistant spinules on the P2–P4 meri of *L. cornuta* (smooth in Edmondson's specimens), and four teeth on the subhepatic region, including two salient ones (three teeth, including a salient one in Edmondson's specimens). They also mentioned as an additional difference the absence or near absence of "tubercles" on the dorsal surface of Edmondson's specimens. This is an error because Edmondson (1951: 202) described the carapace of his specimens as covered with granules, a character they share with the holotype of the new species (see above).

The preceding differences between *L. cornuta* and Edmondson's specimens (i.e. *L okala* **n. sp.**) are also observed when the description and illustrations of *L. cornuta* are compared with the holotype of the new species: rostrum that is shorter in *L. cornuta* (Guinot & Richer de Forges 1995: figs. 37e, f, 41C) than in the new species (Fig. 3a), P2–P4 meri bordered by spines (Guinot & Richer de Forges 1995: figs. 37e) but unarmed (Fig. 1) in the new species, and four subhepatic teeth (Guinot & Richer de Forges 1995: figs. 37e, f, 41C) instead of three in the new species (Fig. 3b). Other differences are also evident. The third maxilliped merus of the new species has a large, rounded tubercle on its anterior half (Fig. 3b) in contrast with two well-developed but smaller tubercles, one anterior and a second on the posterior half, in *L. cornuta* (Guinot & Richer de Forges 1995: fig. 41C), and the carapace is granular (Fig. 3a) in contrast to the absence of conspicuous granules in *L. cornuta* (Guinot & Richer de Forges 1995: fig. 41C). Although the adult male holotype of *L. okala* **n. sp.**, is less than half (6.0 × 4.0 mm) that of the holotype of *L. cornuta* (13 × 9.2 mm), these morphological differences are regarded as not to be related to size, notwithstanding the scarcity of material.

Latreillopsis okala **n. sp.** shares with the nine previously described species of *Latreillopsis* (see Ng *et al.* 2008: 9), a well-developed sub-hepatic region of the carapace, sculpted dorsal surface of the carapace, small lateral carapace teeth, absence of supraorbital teeth, subcheliform P5, moderately long pseudorostral spines without well-developed teeth, and reduced chelipeds that are shorter than the ambulatory legs. Having a small size can be added to the characters shared with Latreillopsis, as re-described by Guinot & Richer de Forges (1995: 393), even if only three small specimens of the new species are known. The small holotype of the new species is an adult, having fully chitinized G1 and G2.

The nine known species of *Latreillopsis* are: *L. antennata* Guinot & Richer de Forges, 1995 (Chesterfield Islands, New Caledonia), *L. bispinosa* Henderson, 1888 (Japan, Philippines), *L. cornuta* Guinot & Richer de Forges, 1995 (South China Sea), *L. daviei* Guinot & Richer de Forges, 1995 (Queensland, Australia), *L. gracilipes* Guinot & Richer de Forges, 1981 (Vanuatu, New Caledonia), *L. laciniata* Sakai, 1936 (Japan), *L. mariveneae*

Richer de Forges & Ng, 2007 (Philippines), *L. tetraspinosa* Dai & Chen, 1980 (Japan to Solomon Islands), and *L. trispinosa* Richer de Forges & Ng, 2008 (Philippines). "*Latreillopsis* aff. *tetrapinosa*" (Guinot & Richer de Forges 1995: 406, figs. 39g, 42B, 43B) from Durban, South Africa may represent a separate species.

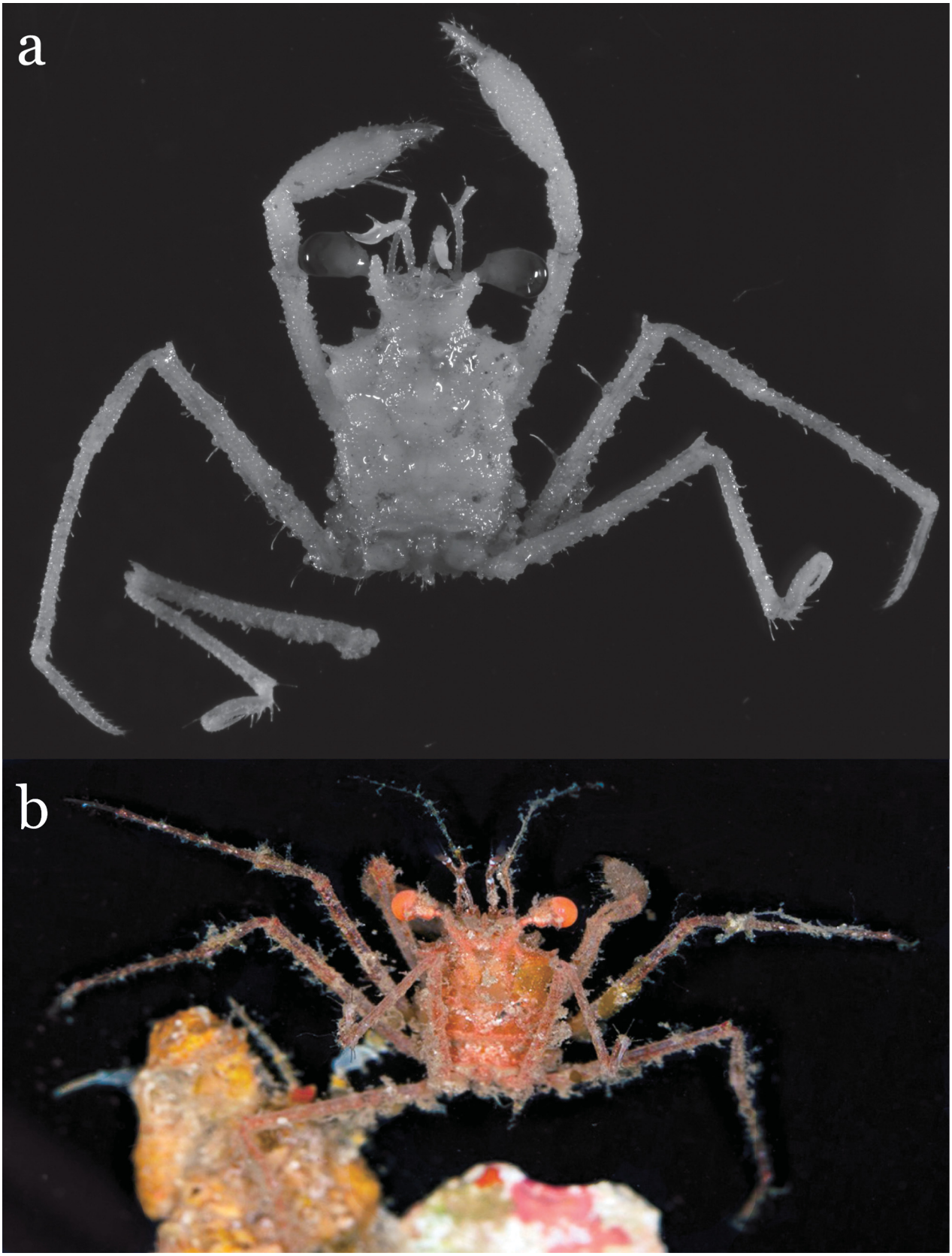

FIGURE 1. *Latreillopsis okala* **n. sp.** Holotype male 6.0 mm × 4.0 mm (USNM 1220315): a, habitus, dorsal view; b, color in life (photograph by P. Fiene).

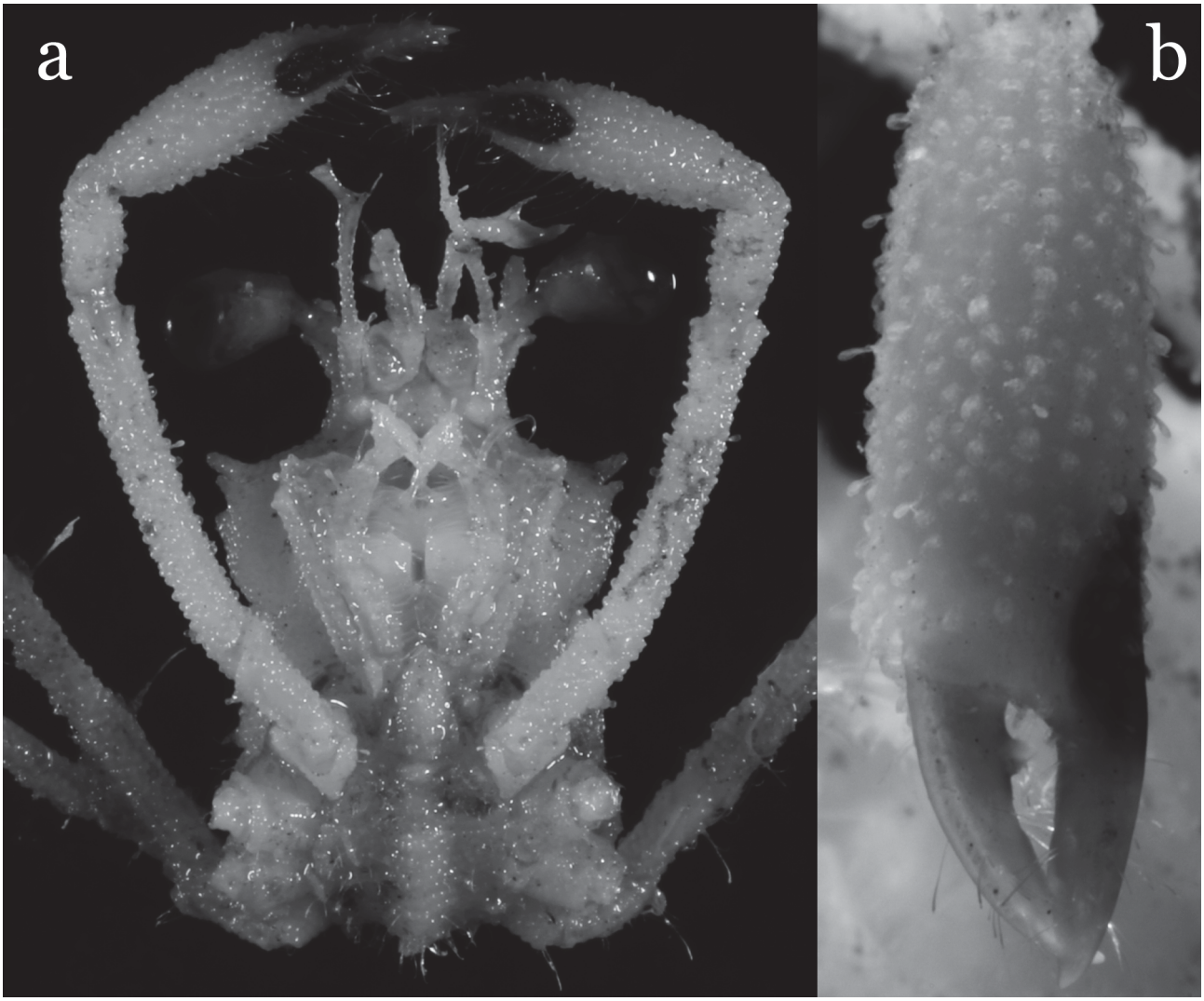

FIGURE 2. *Latreillopsis okala* **n. sp.** species. Holotype male 6.0 mm × 4.0 mm (USNM 1220315): a, cephalothorax, ventral view; b, outer surface of propodus and dactylus, outer view.

Diagnostic for *L. okala* **n. sp.** is the presence of conspicuous tubercles on the carapace and pereopods (Fig. 1) in contrast to the relatively smooth surface of congeners. The new species belongs to the group of four species of *Latreillopsis* having weakly-developed accessory teeth or spines on the pseudorostal spines (see Guinot & Richer de Forges 1995: 394). The new species differs from *L. tetraspinosa* by having three short subhepatic teeth (Fig. 3b), one rounded tubercle on the third maxilliped merus (Fig. 3b) and anterolateral margin of third maxillipeds merus that is sharp but not pointed (Fig. 3b), in contrast to four subhepatic teeth, 2 or 3 tubercles on the third maxilliped merus and ischium, and pointed, salient anterolateral margin of third maxillipeds merus in *L. tetraspinosa* (Dai & Chen 1980: fig. 1; Guinot & Richer de Forges 1995: figs. 42C, D). The new species can be differentiated from *L. bispinosa* by having three short subhepatic teeth and a rostrum that is slightly shorter than the pseudorostral spines (Fig. 3a, b) in contrast with two long subhepatic teeth and pseudorostral spines that are much longer than the rostrum in *L. bispinosa* (Henderson 1888: 22, pl. 2, fig. 3; Guinot & Richer de Forges 1995: figs.35a, b, 41B, 42A, A1), and from *L. gracilipes* and *L. daviei* by not having the swollen subhepatic region and the conspicuous lateroposterior tooth of both species (Davie & Short 1989: fig. 3A, as *L. bispinosa*, and Guinot & Richer de Forges 1995: figs. 34, 40a, b for *L. daviei*; Guinot & Richer de Forges 1995: 38b, and Richer de Forges & Ng 2008: fig. 23 for *L. gracilipes*). *Latreillopsis gracilipes* is also characterized by having three subhepatic teeth and one "granule" (Guinot & Richer de Forges 1995: 402). The new species can be differentiated from *L. trispinosa* by its three short subhepatic teeth, third maxilliped merus with a large, rounded anterior tubercle and sharp anteroexternal angle (Fig. 3a, b) in contrast to three conspicuously long subhepatic teeth and smooth third maxilliped merus with a

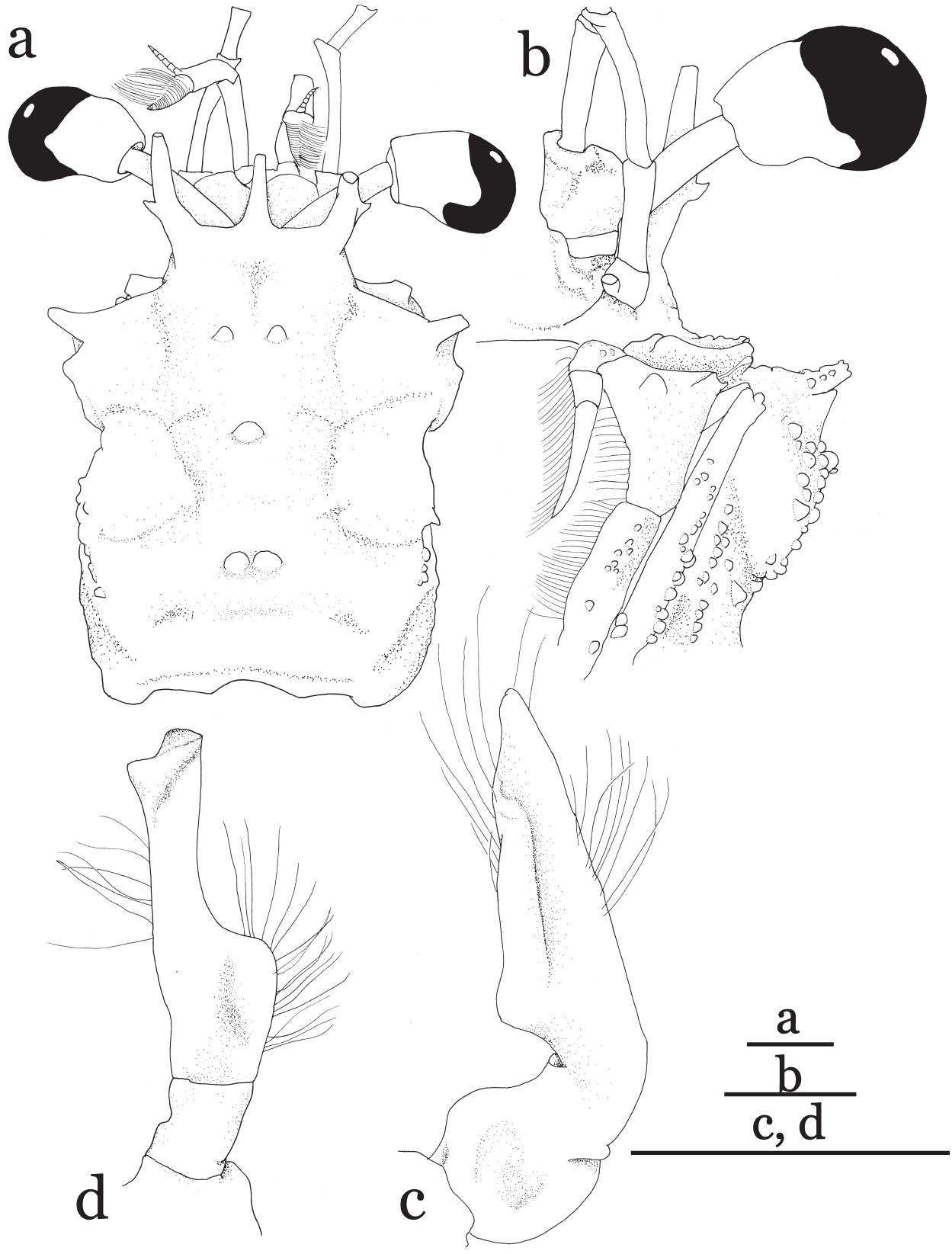

FIGURE 3. *Latreillopsis okala* **n. sp.** Holotype male 6.0 mm × 4.0 mm (USNM 1220315): a, cephalothorax, dorsal view (wart-like granules are not drawn); b, left anterior part of ventral surface of cephalothorax (wart-like granules are not drawn); c, left G1, ventral view; d, left G2, ventral view. Scales: a–d = 1 mm.

rounded anteroexternal angle in *L. trispinosa* (Guinot & Richer de Forges 1995: fig. 41A, as *L. bispinosa* forme *trispinosa*). The anteroexternal angles of the third maxillipeds in the specimens photographed by Richer de Forges & Ng (2008: figs. 24C, 25C), however, are sharp but the angle was described as rounded by Guinot & Richer de Forges (1995: 399). Furthermore, the ocular peduncle, described as short ("*beaucoup plus courts que chez* L. tetraspinosa") by Guinot & Richer de Forges (1995: 399, fig. 41A, as *L. bispinosa* forme *trispinosa*) is clearly longer in the specimens photographed by Richer de Forges & Ng (2008: figs. 24, 25).

There is limited information on the morphology of the G1 and G2 among the species of *Latreillopsis*. The G1 of *L. okala* **n. sp.** is triangular (Fig. 3c), but straight, with rounded apex in *L. gracilipes* (Guinot & Richer de Forges 1981: fig. 6C) and *L. daviei* (Davie & Short 1989: fig. 2a, as *L. bispinosa*). The G2, with a truncated distal part that is folded in cross section (Fig. 3d), is similar to the G2 of *L. daviei* (Davie & Short 1989: fig. 2b, as *L. bispinosa*), but different from the slightly curved and rounded distal part of the G2 of *L. gracilipes* (Guinot & Richer de Forges 1981: fig. 6C1).

Latreillopsis okala **n. sp.** is the fifth species of Homolidae reliably known from the Hawaiian Islands (see Castro 2011: 9, 34).

Family Latreilliidae Stimpson, 1858

Genus *Latreillia* Roux, 1830

Type species: *Latreillia elegans* Roux, 1830, by monotypy; gender feminine.

***Latreillia metanesa* Williams, 1982**

Latreillia metanesa Williams, 1982: 240, figs 3d, 4, 5a, d, 8.—Castro *et al.* 2003: 605 [in key], 613, 628, 629, figs 3C, 6–9, 14A–C.

Material examined. Male 8.4 × 5.1 mm, off southwestern Maui, dredged, 91 m (300 ft), Mike Severns & Shirley Speer coll., 26.10.2112 (ZRC).

Remarks. *Latreillia metanesa* was described from material collected in 1902 by the *Albatross* in the Hawaiian Islands, the holotype dredged off Puniawa Point, northern Maui (Williams 1982: 240). There have been no other records from the Hawaiian Islands since then except for additional 1902 *Albatross* material (Castro *et al.* 2003: 616; Castro 2011: 36). The present specimen is the first of the species to be recorded from the archipelago for more than a century. The species is known from across the Indo-West Pacific and the Sala y Gómez submarine ridge, southeastern Pacific off Chile (Castro *et al.* 2003: fig. 9) from depths of 22–806 m. It was also collected from a station that dredged material from 300–905 m in French Polynesia (Castro, unpublished).

Superfamily Palicoidea Bouvier, 1898

Family Palicidae Bouvier, 1898

Genus *Neopalicus* Moosa & Serène, 1981

Type species: *Cymopolia jukesii* White, 1847, by original designation; gender masculine.

***Neopalicus halihali* n. sp.**
(Figs. 4, 5)

Holotype. Ovigerous female, 5.5 mm × 6.2 mm, off southwestern Maui, dredged, 91 m (300 ft), Mike Severns & Shirley Speer coll., 26.10.2112 (USNM 121140).

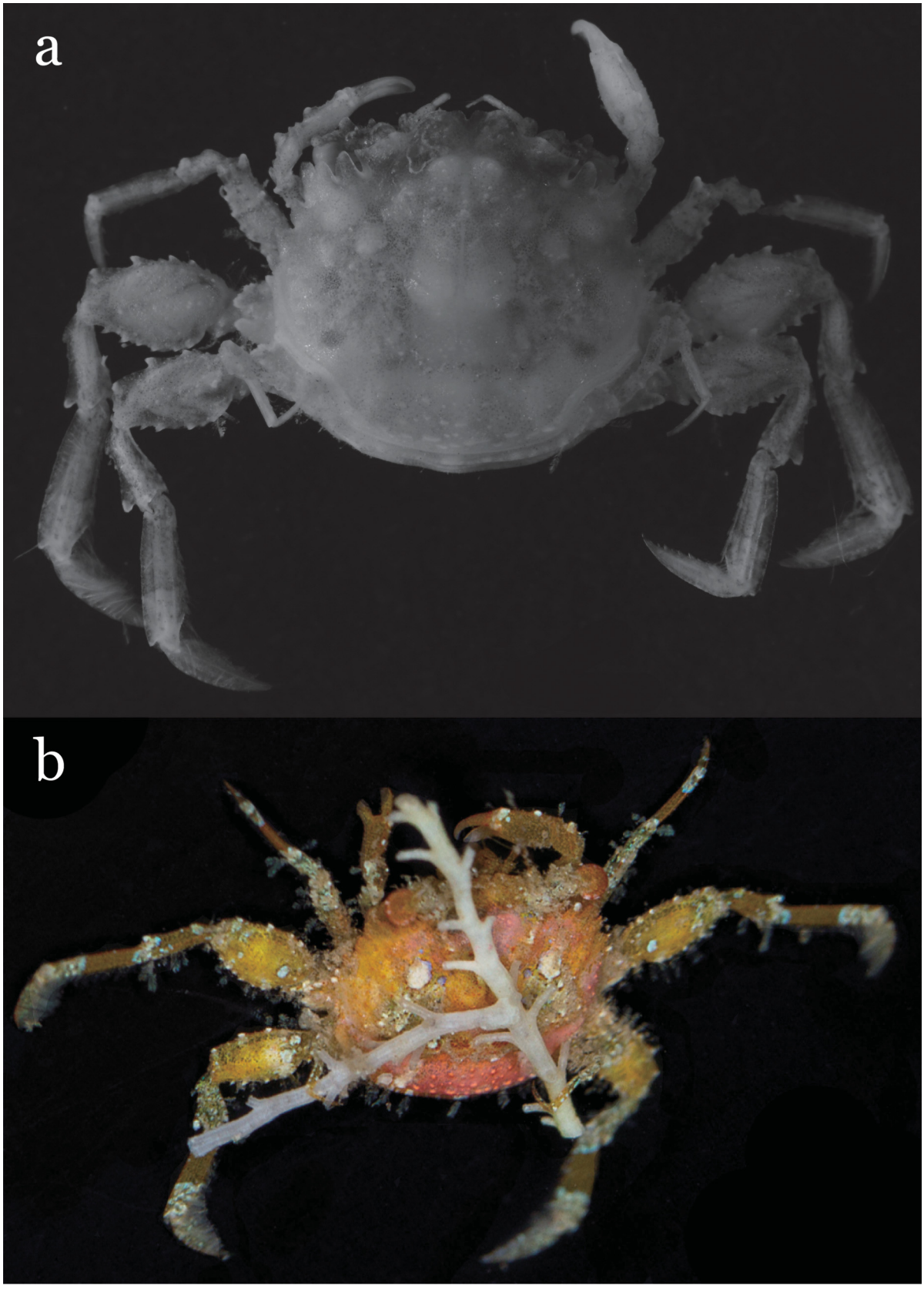

FIGURE 4. *Neopalicus halihali* **n. sp.** Holotype female 5.5 mm × 6.2 mm (USNM 121140): a, habitus, dorsal view; b, color in life, carrying fragment of alga (photograph by P. Fiene).

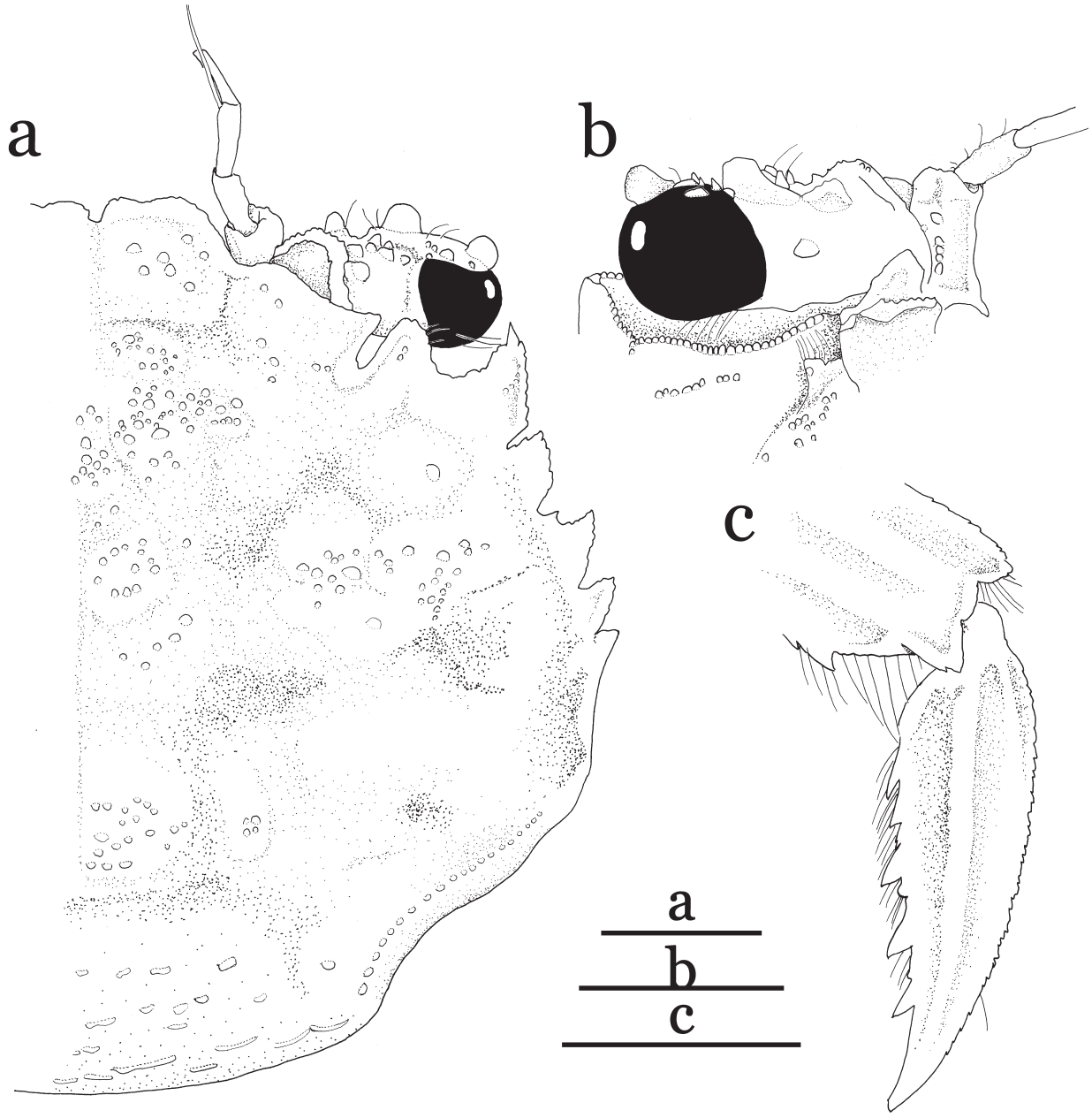

FIGURE 5. *Neopalicus halihali* **n. sp.** Holotype female 5.5 mm × 6.2 mm (USNM 121140): a, right half cephalothorax; b, right half of orbit, anteroventral view; c, dactylus of P4, left, ventral view. Scales: a–c = 1 mm.

Description of female holotype. Carapace subquadrate (Figs. 4, 5a), slightly wider than long (cl/cw = 0.9); small size; dorsal surface covered with fine granules; horizontal row of 6 large, low, granular bosses across carapace posterior to conspicuously elevated mesogastric region; bosses with numerous short plumose setae. Confluence of branchial, mesogastric regions depressed; depression along median portion of frontal region. Short, bilobed rostrum. Frontal border of carapace lateral to rostrum with single, rounded frontal lobe slightly salient anteriorly. Margin between frontal lobes, supraorbital border sinuous, ending in sharp angle, forming deep V-shaped fissure before supraorbital border. Supraorbital border with 2 rounded lobes (right outer lobe missing), inner lobe slightly larger than outer lobe. Postorbital angles short, rounded, not extending beyond dorsal border of retracted eye peduncle, nearly straight. Anterolateral border of carapace (Fig. 5a) with 3 large, salient, triangular teeth with acute tips, plus short, blunt fourth teeth; teeth decrease in size posteriorly, first (anteriormost) largest, most conspicuous. Posterior border with row of short, elongated tubercles, few plumose setae; 2 rows of rounded tubercles anterior to border.

Basal antennal article (Fig. 5b) slender, rectangular, with wide, long, wing-like extension on outer margin; flagellum long, with few short, simple setae. Epistome dorso-ventrally expanded, forming broad, semicircular, nearly flat median lobe; 2 acute teeth on median margin. Ocular peduncle (basophthalmite) (Fig. 5b) thick, with 3 dorsal, triangular, crest-like tubercles, median tubercle largest, rounded tubercle on distal extension of peduncle nearly encircled by cornea. Cornea dorso-ventrally depressed, wider than base of ocular peduncle.

Suborbital border (Fig. 5b) with 2 lobes; short, rounded inner lobe, wider, slightly convex, rounded outer lobe with microscopically dented margin. Pterygostomial lobes projecting ventrally, forming flat, rounded structure posterior to inner suborbital lobe.

Inner margins of third maxilliped ischium straight; surface granular, upper margin rounded. Merus much narrower than ischium, straight-edged.

Chelipeds (P1) (Fig. 4) slightly unequal; propodus of larger cheliped slightly higher, thicker than smaller cheliped, few plumose setae. Dorsal, outer margin of cheliped propodus with crest having 2 high, rounded tubercles plus several smaller tubercles, denticles; inner surface bare of setae; fingers slender, with cutting edges or rounded teeth. Carpus short, dorsal, outer margin with conspicuous, high, rounded tubercle; merus slender, smooth.

Ambulatory legs (P2–P4) (Figs. 4a, 5c) dorsoventrally flattened; P2 shorter than P3, P4; P3 nearly as long as P4. Upper, lower margins of P3, P4 meri with several short, tooth-like tubercles; distalmost upper margins angular, without distinctive tubercle. Outer margins of P3, P4 carpi with 2 or 3 triangular, tooth-like tubercles, distalmost largest. Outer margins of P3, P4 propodi smooth, inner margins armed with 6 or 7 short teeth, low carina along middle portion. P3, P4 dactyli (Fig. 5c) with long, inner margins armed with 5 or 6 short teeth, low carina along middle portion. Few long plumose setae on inner, outer margins of P2–P4 meri, distal portion of carpi; numerous long plumose setae on inner surface of propodi, dactyli. P5 (Fig. 4) reduced (0.8 cl), dorsal to P4; merus slender, with microscopic tubercles along inner margin, scattered plumose setae; propodus with 3 long spines along inner margin; dactylus with microscopic tubercles along margins, acuminate tip.

Abdomen with all somites freely articulating, outer surface smooth without transversal ridges. Vulva small, on thoracic sternite 6 but displaced to median plate of sternum.

Male unknown.

Etymology. Reduplication for emphasis of *hali*, Hawaiian for "to transport," in reference to the carrying behavior recorded in the new species. The name is treated as a Latin noun in apposition.

Remarks. *Neopalicus halihali* **n. sp.** is assigned to *Neopalicus* Moosa & Serène, 1981, as re-described by Castro (2000: 548). *Neopalicus* until now consisted of three Indo-West Pacific species: *N. contractus* (Rathbun, 1902), *N. jukesii* (White, 1847), and *N. simulus* Castro, 2010. The new species shares with its congeners a subquadrate carapace with horizontal rows of large and low bosses on its dorsal surface; large, spherical (not rheniform) eyes with ocular peduncles each having three dorsal tubercles, supraorbital borders with two rounded lobes; basal antennal article with a flattened expansion; dorso-ventrally flattened, expanded epistome, without an apparent median fissure; P2–P4 with dorso-ventrally flattened (not filiform) carpi, propodi, and dactyli; spinous posterior margins of the P5 propodus; and abdomen of adult females with all somites freely articulating (see Castro 2000: 548, tab. 1).

There are nevertheless differences between *N. halihali* **n. sp.** and its three congeners: presence of three triangular teeth along each anterolateral border (Fig. 5a) instead of two large truncated teeth (Castro 2000: fig. 39; 2010: fig. 1A, B), presence of a small fourth anterolateral tooth absent in congeners, P3 and P4 propodi with simple margins (Fig. 4a) without a wide and convex extension (Castro 2000: fig. 39; 2010: fig. 1A, B), P2 and P3 dactyli posterior margins dentate (Fig. 5c) instead of entire, and female abdomen with smooth somites instead of the presence of ridges. The rostrum is bilobed as in *N. contractus* and *N. jukesii* (Castro 2000: fig. 39) but different from the simple rostrum of *N. simulus* (Castro 2010: fig. 1A, B). The suborbital border consists of two slightly convex lobes (Fig. 5b), similar to *N. simulus* (Castro 2010: fig 1C), but different from the triangular lobes of the other two congeners (Castro 2000: fig. 40).

Neopalicus halihali **n. sp.** is closest to *N. simulus*, another small-size species known only from French Polynesia. In addition to the similarities and differences indicated above, the new species differs from *N. simulus* by having a row of low, elongated tubercles on the posterior border of the carapace (Fig. 5a) (short, rounded tubercles, one at each end, plus three median tubercles in *N. simulus*); basal antennal article with wide, long outer extension (Fig. 5b) (short, wing-like extension in *N. simulus*; Castro 2010: fig. 1C); outer margin of cheliped propodus with a conspicuous crest consisting of two high, rounded tubercles plus several smaller tubercles and

denticles (Fig. 4a) (two high, rounded tubercles and no crest in *N. simulus*; Castro 2010: fig. 1A); dorsal, outer margin of cheliped carpus with a conspicuous, high, rounded tubercle (Fig. 4a) (smooth in *N. simulus*; Castro 2010: fig. 1A); outer margins of P3 and P4 carpi with tooth-like tubercles and denticles (Fig. 4a), inner margin dentate (outer margin with rounded tubercles, smooth inner margin in *N. simulus*; Castro 2010: fig. 1A); outer margins of P4 propodi with microscopic tubercles (entire, with wide, convex, carina-like extension in *N. simulus*); inner margins of P3 and P4 dactyli dentate (Fig. 5c) (entire in *N. simulus*; Castro 2010: fig. 1A); and smooth female abdomen, without transversal ridges (transversal ridge along each somite 1–4, less pronounced in other somites in *N. simulus*).

The male of the new species remains unknown. Males of the three congeners are characterized by having elongated abdomens with all somites freely articulating, and a long and slender G1 with sinuous basal portion but very different terminal portions (see Castro 2000: fig. 41a–c for *N. contractus* and *N. jukesii*; 2010: fig. 1D for *N. simulus*). Although some of the differences between the chelipeds of the new species and *N. simulus* may be sex related, the characters of the female holotype alone are distinctive enough to warrant its description as a separate species of *Neopalicus*.

Neopalicus contractus is known from across the Indian (type locality: Maldives) and western Pacific oceans (Philippines to New Caledonia and the Marshall Islands). The distribution of *N. jukesii* (type locality: Queensland, Australia) is close to that of *N. contractus* except that *N. jukesii* is also known from the Red Sea and Japan but not from the central Pacific (Castro 2000: fig. 49, 588). Both *N. simulus* and *N. halihali* **n. sp.** are known only from the eastern limits of the Indo-West Pacific region, *N. simulus* from the Austral Islands, French Polynesia, and *N. halihali* **n. sp.** from the Hawaiian Islands. *Neopalicus contractus* and *N. jukesii* have been collected, sometimes sympatrically, in coarse sand near coral reefs at depths of 10–146 m (see Castro 2000: 587), *N. simulus* from rocky bottoms containing coral rubble at 90–200 m (one specimen from 360–840 m; Castro 2010: 78), and *N. halihali* **n. sp.** from coral rubble at 91 m.

The live holotype of the new species was photographed carrying what appears to be a dead fragment of a filamentous red alga (Fig. 4b). Two other species of palicids have been recorded as carrying fragments of sediment or seaweeds with their reduced, dorsally-placed P5, a behavior known as carrying behavior (see Guinot *et al.* 2013: 246, fig. 54). This behaviour is most probably widespread, even universal, among palicids.

The new species represents the fourth species of Palicidae known from the Hawaiian Islands (see Castro 2011: 10, 54).

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References

Castro, P. (2000) Crustacea Decapoda: A revision of the Indo-west Pacific species of palicid crabs (Brachyura Palicidae). *In*: Crosnier, A. (Ed.), Résultats des Campagnes MUSORSTOM. Vol. 21. *Mémoires du Muséum national d'Histoire naturelle* (Paris), 184, pp. 437–610.

Castro, P. (2011) Catalog of the anomuran and brachyuran crabs (Crustacea: Decapoda: Anomura, Brachyura) of the Hawaiian Islands. *Zootaxa*, 2947, 1–154.

Castro, P., Williams, A.B. & Cooper, L.L. (2003) Revision of the family Latreilliidae Stimpson, 1858 (Crustacea, Decapoda, Brachyura). *Zoosystema* (Paris), 25 (4), 601–634.

Dai, A.Y. & Chen, H.L. (1980) One new species of *Latreillopsis* from South China Sea. *Acta Zootaxonomica Sinica*, 5 (1), 39–41.

Davie, P.J.F. & Short, J.W. (1989) Deepwater Brachyura (Crustacea: Decapoda) from southern Queensland, Australia with descriptions of four new species. *Memoirs of the Queensland Museum*, 27 (2), 157–187.

Edmondson, C.H. (1951) Some Central Pacific crustaceans. *Occasional Papers of Bernice P. Bishop Museum*, 20 (13), 183–243.

Gordon, I. (1950) Crustacea Dromiacea. Part I: Systematic account of the Dromiacea collected by the "John Murray" Expedition. Part II. The morphology of the spermatheca in certain Dromiacea. *Scientific Reports of the John Murray Expedition 1933–34*, 9 (3), 201–253.

Guinot, D. & Richer de Forges, B. (1981) Homolidae, rares ou nouveaux, de l'Indo-Pacifique (Crustacea, Decapoda, Brachyura). *Bulletin du Muséum national d'Histoire naturelle* (Paris), sér. 4, 3, sect. A (2), 523–581.

Guinot, D. & Richer de Forges, B. (1995) Crustacea Decapoda Brachyura: Révision de la famille des Homolidae de Haan, 1839. *In*: Crosnier, A. (Ed.), Résultats des campagnes MUSORSTOM, vol. 13. *Mémoires du Muséum national d'Histoire naturelle* (Paris), 163, pp. 283–517.

Guinot, D., Tavares, M. & Castro, P. (2013) Significance of the sexual openings and supplementary structures on the phylogeny of brachyuran crabs (Crustacea, Decapoda, Brachyura), with new nomina for higher-ranked podotreme taxa. *Zootaxa*, 3665, 1–414.
http://dx.doi.org/10.11646/zootaxa.3665.1.1

Henderson, J.R. (1888) Report on the Anomura collected by H.M.S. *Challenger* during the years 1873–1876. *In*: Wyville Thomson, C. & Murray, J. (Eds.), *Report of the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76 Under the Command of Captain George S. Nares, R.N., F.R.S. and the late Captain Frank Tourle Thompson, R.N.*, Zoology, 27 (69), i–xi + pp. 1–221 pp., pls. 1–21.

Ng, P.K.L., Guinot, D. & Davie, P.J.F. (2008) Systema Brachyurorum: Part I. An annotated checklist of extant brachyuran crabs of the world. *Raffles Bulletin of Zoology*, Supplement 17, 1–286.

Richer de Forges, B. & Ng, P.K.L. (1981) New western Pacific records of Homolidae De Haan, 1839, with descriptions of new species of *Homolochunia* Doflein, 1904, and *Latreillopsis* Henderson, 1888 (Crustacea: Decapoda: Brachyura). *Zootaxa*, 1967, 1–35.